II. CLAIM AMENDMENTS

1. (Cancelled)

2. (Cancelled)

3. (Previously Presented) The apparatus of claim 9, further comprising a tunable light source for providing the incident optical signal.

4. (Currently Amended) The apparatus of claim 9, wherein the delay unit comprises:

a beam splitting unit ~~adapted~~ for splitting the incident optical signal into at least two optical signals comprising a first optical signal and a second optical signal;

at least two different light paths ~~adapted~~ for delaying said optical signals with respect to each other, in order to obtain at least two delayed signals; and

a beam-combining unit for forming the composite signal by superimposing said delayed signals.

5. (Previously Presented) The apparatus of claim 9, wherein said DUT response signal is at least one of: an optical signal transmitted through said DUT, and an optical signal reflected by said DUT.

6. (Currently Amended) The apparatus of claim 9, further comprising a second determination unit, whereby said first determination unit ~~is adapted to detect~~detects an optical signal transmitted through said DUT, and whereby said second

determination unit ~~is adapted to detect~~detects an optical signal reflected by said DUT, or vice versa.

7. (Previously Presented) The apparatus of claim 9, wherein the optical property is determined by analyzing an interference pattern of said DUT response signal.

8. (Previously Presented) The apparatus of claim 9, wherein the optical property is at least one of a group comprising phase properties of the DUT or loss or gain properties respectively of the DUT.

9. (Currently Amended) An apparatus for determining an optical property of a device under test - DUT -, comprising:

a delay unit ~~adapted~~ for providing a composite signal comprising superimposed signals delayed with respect to each other and that interfere with each other; and

a first determination unit ~~adapted~~ for determining the optical property of the DUT from a detected DUT response signal, or a signal derived therefrom, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom,

wherein the delay unit ~~is adapted for deriving~~derives the superimposed signals from an incident optical signal, and

wherein said incident optical signal is swept in frequency with a predefined sweep speed over a frequency tuning range.

10. (Currently Amended) An apparatus for determining an optical property of a device under test - DUT -, comprising:

a delay unit ~~adapted~~ for providing a composite signal comprising superimposed signals delayed with respect to each other and that interfere with each other; and

a first determination unit ~~adapted~~ for determining the optical property of the DUT from a detected DUT response signal, or a signal derived therefrom, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom,

wherein a frequency separation Δf between said delayed signals is varied by varying a sweep speed for sweeping the incident optical signal in frequency.

11. (Previously Presented) The apparatus of claim 4, wherein at least one of said light paths comprises at least one of:

a variable delay line for varying a frequency separation Δf between said delayed signals, and

a polarization controller for adjusting a polarization of at least one of said delayed signals.

12. (Currently Amended) An apparatus for determining an optical property of a device under test - DUT -, comprising:

a delay unit ~~adapted~~ for providing a composite signal comprising superimposed signals delayed with respect to each other and that interfere with each other; and

a first determination unit ~~adapted~~ for determining the optical property of the DUT from a detected DUT response signal, or a signal derived therefrom, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom,

wherein a first interference pattern is detected for a first frequency separation Δf_1 between said delayed signals, and wherein a second interference pattern is detected for a second frequency separation Δf_2 between said delayed signals.

13. (Previously Presented) The apparatus of claim 9, further comprising a reference determination unit for performing a reference measurement of said composite signal, or of a signal derived therefrom.

14. (Currently Amended) An apparatus for determining an optical property of a device under test - DUT -, comprising:

a delay unit ~~adapted~~ for providing a composite signal comprising superimposed signals delayed with respect to each other and that interfere with each other; and

a first determination unit ~~adapted~~ for determining the optical property of the DUT from a detected DUT response signal, or a signal derived therefrom, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom,

wherein a frequency separation Δf between said delayed signals is determined by analyzing a reference interference pattern of said composite signal, or of a signal derived therefrom.

15. (Currently Amended) An apparatus for determining an optical property of a device under test - DUT -, comprising:

a delay unit ~~adapted~~ for providing a composite signal comprising superimposed signals delayed with respect to each other and that interfere with each othr;

a first determination unit ~~adapted~~ for determining the optical property of the DUT from a detected DUT response signal, or a signal derived therefrom, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom; and

an optical modulator ~~adapted~~ for modulating said composite signal, or said DUT response signal, or a signal derived from said signals, with an external frequency.

16. (Previously Presented) The apparatus of claim 4, wherein

said first beam splitting unit splits the light of said tunable light source into at least three optical signals comprising said first optical signal, said second optical signal and a third optical signal,

wherein the light path of said first optical signal comprises a polarization controller that sets the polarization of said first optical signal to first polarization state, and

wherein the light path of said third optical signal comprises a polarization controller that sets the polarization of said third optical signal to a second polarization state.

17. (Currently Amended) The apparatus of claim 9, wherein said first determination unit comprises a polarization diversity receiver ~~adapted~~ for detecting an interference pattern in dependence on the state of polarization of said DUT response signal, or of a signal derived therefrom.

18. (Cancelled)

19. (Previously Presented) A method for determining an optical property of a device under test - DUT -, comprising:

providing a composite signal by superimposing signals delayed with respect to each other so that they interfere with each other;

detecting a DUT response signal, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom;

determining the optical property of the DUT from the detected DUT response signal or a signal derived therefrom;

splitting an incident signal into at least two optical signals comprising a first optical signal and a second optical signal; and

individually delaying said optical signals via at least two different light paths in order to obtain said delayed signals.

20. (Previously Presented) A method for determining an optical property of a device under test - DUT -, comprising:

providing a composite signal by superimposing signals delayed with respect to each other so that they interfere with each other;

detecting a DUT response signal, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom;

determining the optical property of the DUT from the detected DUT response signal or a signal derived therefrom; and

sweeping the frequency of an incident signal over a frequency tuning range.

21. (Previously Presented) A method for determining an optical property of a device under test - DUT -, comprising:

providing a composite signal by superimposing signals delayed with respect to each other so that they interfere with each other;

detecting a DUT response signal, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom;

determining the optical property of the DUT from the detected DUT response signal or a signal derived therefrom; and

repeating at least once the measurement with a different state of polarization of the superimposed signal.

22. (Previously Presented) The apparatus of claim 9, further comprising a tunable laser source for providing the incident optical signal.